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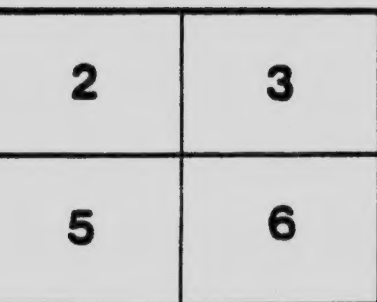
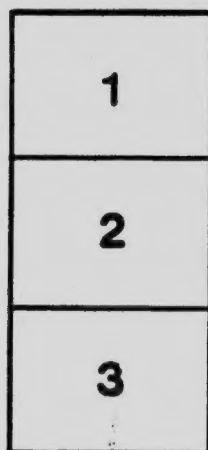
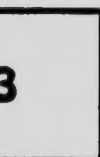
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DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

EXPERIMENTAL FARMS.

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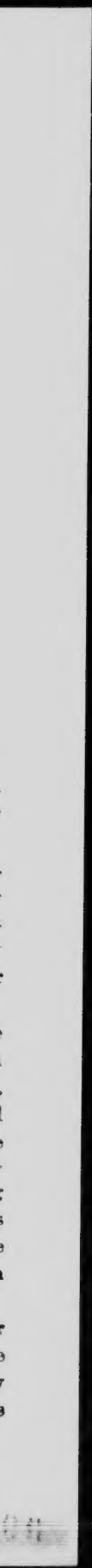
DIGGING AND STORING OF POTATOES.

By W. T. Macoun, *Dominion Horticulturist.*

The best time to dig potatoes, if they are not affected with late blight or rot, is as soon as the tops have died. If the weather is dry or where the tops remain green until killed by frost, the digging should be delayed until that time, as during September there is often a great development of tubers. Where potatoes are grown on the average farm the digging is usually left as a matter of convenience until after the corn is harvested, where that crop is grown, as, when the tubers are covered with soil, the latter may be frozen an inch or so in depth, without the crop being injured. Potatoes should not, however, be left in the ground when there is danger of the ground freezing to a greater depth. When the soil is fairly well drained and not particularly wet the digging may be delayed for a month or more without much injury to the crop if the tubers are healthy; however, where there is no disease the sooner the potatoes are dug, after the tops are dead, the better.

Potatoes which have been killed by late blight will usually rot as soon as the conditions are favourable, and for this reason it is better to leave a diseased crop in the ground as long as possible, as the tubers which are diseased will, most of them, show signs of rot before they have to be taken up on account of frost, and they need not be gathered. If diseased potatoes are dug and stored as soon as the tops are dead, the disease will be almost certain to develop in the pit or cellar, and healthy tubers will rot from contact with the diseased ones. It is not good practice to dig diseased potatoes early and pile them in the field. It is better to delay digging as long as possible and then put the potatoes in a cool, well-ventilated cellar where the disease may be checked. Potatoes in wet soil should be dug sooner than those in that which is drier and well drained.

Potatoes should be dug in dry weather, so that when they are taken to the cellar or store-room they will be perfectly dry. If the tubers are housed when wet, the conditions become very favourable for the development of any disease which may affect them and for the rotting of the healthy potatoes from contact with those thus affected.



Where there are large areas to be dug a good potato digger is essential. Not only will a potato digger raise the crop more economically than a fork or plough, but with it the grower is more likely to get his crop dug and picked up while the weather is fine, which is a great consideration. There are a number of good potato diggers now on the market which will dig up and leave on the surface of the soil practically all the tubers.

Ploughing potatoes out is quite a common method among farmers, but in ploughing them out there is always a considerable number of potatoes left in the ground, and the additional labour required to pick up these potatoes which are scattered all over the field after harrowing is an item.

The old-fashioned, yet thorough, way of digging with the four-tined potato fork is too slow and expensive a method, now that good men are difficult to get and wages are so high, but where these do not have to be taken into consideration as good or better work is done by a man than by any implement. A man with a fork will dig little more than half an acre a day; a good potato digger will dig from three to five acres a day.

STORING POTATOES.

Potatoes should be stored dry in a cool, well-ventilated cellar which is perfectly dark. There is no doubt great losses occur every year from the careless storing of wet potatoes in comparatively warm and poorly ventilated cellars and piled in great heaps, giving almost ideal conditions for the development of any disease which may be in them and very favourable conditions for rotting. The expense of providing a good system of ventilation for a cellar would be soon offset by the better condition in which the potatoes would keep; hence the more profit there would be from them. Should it be considered unwise to go to this expense, every effort should be made to have as free air circulation about the potatoes as possible. Instead of piling the potatoes against the wall or on the floor, slats should be nailed a little apart about six inches or more from the wall. This will give a circulation of air behind the pile. A temporary floor should be put down about six inches above the permanent floor, with cracks between the boards. This will permit air to circulate under and through the pile. Then if the piles have to be made very large, square ventilators of wood made of slats and running from the top to the bottom of the pile could be put in here and there through the pile. These with the ventilation afforded at the sides and bottom will keep the potatoes in a much better condition than if they were in a solid pile. Another good plan is to keep the potatoes in large crates made with slats. The ventilation between these crates would assist very much in keeping the tubers in good condition. Thousands of bushels of potatoes are lost every year, when there is disease in the crop, by neglecting ventilation. The temperature of the cellar or store-house should be kept as nearly 33° to 35°F. as possible. The cooler potatoes are kept without freezing the better. Not only is the value of the tubers for seed lessened by sprouting, but they are also much injured for eating. Moreover, if the potatoes are held over to sell in the spring, sprouting will cause a great deal of shrinkage in weight. It is important to have some means of letting an abundance of fresh air into the cellar towards spring, when it becomes more difficult to keep the potatoes in good condition. Cool air should be let in at night when the outside temperature is lowest and the cellar should be kept closed during the day.

TEMPORARY STORAGE.

Sometimes it is difficult to get all the crop to the cellar at digging time, and when this is the case the potatoes may be put in piles of forty or fifty bushels in a place where water will not lie and covered with straw, with a little earth on top to keep them dry, more earth being put over the straw if the weather becomes cold. If the potatoes are diseased, however, it is not safe to pile them in this way, and even if they are healthy, piling in the field should be avoided if at all possible, as the crop is much easier to handle afterwards in the cellar than outside in the cold, perhaps inclement, weather. If potatoes are found to be diseased at digging time, a good plan is to fix up a place in the barn where it is quite dry and where frost can be kept out for a time and spread the potatoes in shallow piles.

Many persons are growing potatoes for the first time this year in either small or moderately large quantities. The methods just described can be used by such persons in many cases. In other cases the quantity grown being quite small, can all be stored in the cellar as soon as the potatoes are dug. In storing in the cellar it is better to keep the potatoes in boxes or crates rather than in bags, as the latter are liable to rot. Moreover, when the potatoes start to sprout, as they will do during the winter, they will be more quickly noticed when in boxes and the sprouts kept removed. The oftener the sprouts are removed, when they appear, the better the potatoes will keep, but where possible the potatoes should be kept so cool and in such a dark room that they will not sprout. Before storing even small quantities of potatoes it is desirable to have them quite dry.

In the more newly settled parts of Canada the settlers have difficulty in storing their potatoes before they get a good cellar, and even those who have been long in the country often have not adequate accommodation for their potatoes.

The following method of storing 1,000 bushels of potatoes has been very successfully followed on the prairies: A hole in the ground 14 feet wide, 4 to 4½ feet deep, and about 30 feet long will give ample space. The sides and ends of the hole may be lined with boards to prevent earth from falling in, though the earth may be braced back with poles if boards cannot be readily obtained. Fill the hole to a height of 3½ feet with potatoes, then place logs along the sides and ends to hold back the earth thrown out and for supports for the poles of the roof. The depth of this side log and elevation in centre of the roof is to be left as an air space, and no straw or rubbish whatever is put on top of the potatoes. A roof is made with poles placed close together. There should be but a slight elevation at the centre of the roof.

When the poles for the roof are in place there should be a little hay thrown over them to keep the soil from falling through. The roof should now be well sodded and some of the loose earth which was dug out of the hole shovelled over the sods to make about one foot deep of earth and sods. Another foot of well-rotted, dry horse manure will be sufficient during the coldest winter. The natural ground heat from the bottom will keep the temperature fairly even. In a pit this size there should be three ventilators, each about 4 by 6 inches, made of boards, one at each end and one in the centre. These should be put in when roofing. These are closed in the very cold weather with old sacks, and empty boxes then turned over them; when the weather becomes frosty, the centre ventilator may be kept closed all the time. There should be no potatoes directly under the end ventilators, as the drip of water from them

causes the potatoes to rot. A thermometer can be let down at any time to test the temperature. In a pit of this kind the temperature should not go much below 40°F. It is advisable to dig an approach at one end to get to the potatoes in the spring. This should be sunk as deep as the pit and roofed over as the pit, and can be kept filled with manure or old bags during the winter to prevent frost getting in.

Plans for cheap root cellars will be found in Exhibition Circular No. 71 of the Experimental Farm Series, "Plan of Root Cellar for Western Canada," and in the Annual Report of the Division of Forage Plants, Dominion Experimental Farms Report for 1914.

CO-OPERATIVE STORING OF POTATOES.

Many persons in cities and towns have very poor facilities for storing potatoes. They live in rented houses with, in many cases, only one cellar which is the furnace room as well. Such cellars are usually too warm for storing potatoes for any length of time, and the tubers sprout and wilt early and lose much of their value. Few persons in rented houses care to go to the expense of making a compartment in the cellar where the temperature can be kept lower. The result is that only a limited quantity of vegetables is stored at one time by the average citizen.

A large number of people are now growing their own vegetables and the question of where to obtain good storage for these and particularly the potatoes is a very important one. If those who have grown potatoes are obliged to sell part of them this autumn because they have no good place to store them, and have to buy potatoes, probably at a greatly increased price, before new ones are ready next season it would not be very satisfactory to the grower. The suggestion is herewith made that committees be formed in the various cities and towns to find if there are any available cool, frost-proof cellars where potatoes could be stored during the winter at a minimum charge. Each grower would bring his potatoes to the cellar, they could be stored in separate lots and arrangements could be made so that he could get his own potatoes as desired. The details in regard to such a co-operative plan would have to be worked out locally, but there seems no reason why some such arrangement could not be made.



